REMARKS

Applicant respectfully requests consideration of the subject application as amended herein. This Amendment is submitted in response to the Office Action mailed March 9, 2005. Claims 33-42 have been withdrawn. Claims 1-32 are rejected. Claim 8 is objected.

In this Amendment, Claims 1, 8, 18, 19, 21, and 23 have been amended. Claim 8 has been amended to correct to grammar informalities, the support for the amendment can be found at least in the Specification, pages 11-12, paragraph [0030].

Election/Restriction

Applicant affirms the Election made by Mark Kupanoff on February 25, 2005 during a telephone conversation with the Examiner. Invention I (comprising claims 1-32) is elected.

35 U.S.C. § 112, second paragraph

The Examiner has rejected Claims 19, 21-27 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Claims 19, 21, and 23 have been amended to correct the indefiniteness for the Claims 19, and 21-27. Applicant respectfully submits that Claims 19, and 21-27 now comply with 35 USC §112, second paragraph, and therefore requests withdrawal of this rejection.

Rejections under 35 U.S.C. § 103(a)

The Examiner has rejected claims 1-5, 18-20 and 28 under 35 U.S.C. §103(a) as being unpatentable over Nagamine (U.S. Patent No. 6,715,943, hereinafter "Nagamine") in view of Tsukamoto, et al. (U.S. Patent No. 5,993,552, hereinafter "Tsukamoto").

Applicant respectfully disagrees. Applicant submits that Nagamine and Tsukamoto individually or in combination did not teach, suggest, or motivate (Claim 1):

> A semiconductor substrate processing apparatus, comprising:
> a frame;
> a substrate support mounted to the frame to support a semiconductor substrate;
> a dispense head, having at least one outlet opening, connected to the frame for movement relative to the semiconductor substrate; and
> a solvent bath attached to the frame having a reservoir and a drain, the reservoir holding a first fluid, the solvent bath shaped such that when the dispense head is in a selected position in the solvent bath, a second fluid dispensed from the at least one outlet opening enters the drain and the at least one outlet opening is exposed to the first fluid.

Patent law requires that the evidence for the motivation to combine references under 35 U.S.C. § 103 must come from either 1) within the references themselves or 2) in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. See In re Lee, 277 F.3d 1338, 1344 (Fed. Cir. 2002), In re Thrift, 298 F.3d 1357, 1361 (Fed. Cir. 2002) and the Manual of Patent Examining Procedure section 2143.

Nagamine and Tsukamoto, individually or in combination made no suggestion a solvent bath which includes a reservoir and a drain, where the reservoir holds a first fluid, the solvent bath is shaped such that when the dispense head is in a selected position in the solvent bath, a second fluid dispensed from at least one outlet opening in the dispense head enters the drain of the solvent bath, and where the outlet opening is exposed to the first fluid as recited in Claim 1.

Applicant respectfully submits that the Examiner did not provide sufficient reasoning for obviousness under 35 U.S.C. § 103. The Examiner stated that Nagamine lacks teaching of a solvent bath having a drain and the formation of the solvent bath such that when the dispense head is in a selected position, a second fluid dispensed form the at least one outlet opening enters the drain and the at least one outlet opening is exposed to the first fluid. However, the Examiner stated that Tsukamoto disclosed a solvent bath having a drain and thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a solvent bath having a drain and wherein a second fluid dispensed from the at least one outlet opening enters the drain and the at least one outlet opening is exposed to the first fluid in Nagamine to replace the soaking fluid in the reservoir as much as needed preventing contamination in the dispensing head. Applicant submits that this did not suggest the element of Claim 1.

First, both Nagamine and Tsukamoto taught a nozzle placed in a bath when the nozzle is not in used. For example, in Nagamine, (col. 9, lines 11-25),

> Washing tanks 98 and 99 for washing the developing solution supply nozzles 90 and 91 are provided on both of side walls on the Y-direction side of the cup accommodating section 70 so that the developing solution supply nozzles 90 and 91 are allowed to be kept on stand-by in the washing tanks 98 and 99 except when the developing solution is supplied. The washing tanks 98 and 99 have recessed-shaped cross sections for receiving the long and slender developing solution supply nozzles 90 and 91 therein, and a washing fluid for washing off the developing solution adhering to the developing solution supply nozzles 90 and 91, for example, pure water is stored inside the washing tanks 98 and 99.

The solution in the washing tank prevents adherence to the nozzle. There is no teaching or suggestion in Nagamine of a need to drain solution <u>from inside of the nozzle</u>, not to mention a need to purge solution inside the nozzle through a drain provided in the solvent bath as recited in the Claims 1. Also, there is no suggestion in Nagamine of a position of the

nozzle in the solvent bath that will have the nozzle drain out a fluid from the nozzle via a drain provided in the solvent bath.

In Tsukamoto, a nozzle and a solvent bath having a drain are disclosed. Tsukamoto did not teach that fluid in the nozzle is being dispensed or purged through a drain in the solvent bath. In Tsukamoto, it is described, (col. 9, lines 40-67),

> In the resist applying machine 14, the resist nozzle 104 is soaked in a solvent bath 106 filled with a resist solvent when it is not in use, which prevents the hardening of the resist at the tip of the resist nozzle 103. When the substrate S applied with resist at the resist applying machine 14 and conveyed by the arm 101 is placed on the substrate table 21 and the nozzles 45, 46, 47, and 48 are moved along the corresponding four sides of the substrate S, this allows the peripheral resist removing machine 15 to dissolve and remove the unnecessary resist stuck to the periphery of the substrate S.
>
> A widely-used supply line 107 supplying a solvent to the solvent bath 106 has been connected to the side of the solvent bath 106 as shown in FIG. 16. This causes the fear that the solvent supplied to the solvent bath 106 will not flow smoothly to the drain 108 and will flow backward to the supply Line 107.
>
> To avoid the fear, it is favorable that the supply line 107 for supplying the solvent to the solvent bath 106 is connected to the top side of the solvent bath 106. This will prevent the solvent from flowing backward to the supply line 107.

The drain in Tsukamoto is to allow the solvent to flow out of the solvent bath that is used to keep the solvent from hardening on the nozzle. There is no indication that a fluid in the nozzle is drained out via the solvent bath and through the drain as recited in Claim 1 of Applicant's invention. As can be understood from Tsukamoto, the drain 108 in the solvent bath 106 is provided so that the solvent supplied into the bath 106 can flow out (such as to refresh). There is no suggestion that a drain is for a fluid dispensed from the nozzle to drain directly through the solvent bath. A drain 108 is provided in the solvent bath 106 so that the solvent can flow smoothly out of the bath, seemingly when the supply line 107 pumps solvent into the bath 106. This could have not suggested that a drain is provided in a solvent bath where a fluid from a nozzle is purged through as recited by Claim 1.

Applicant thus submits that it would have NOT been obvious to one of ordinary skill in the art at the time of the invention to combine Nagamine and Tsukamoto to derive to Applicant's invention where it is recited "a solvent bath attached to the frame having a reservoir and a drain, the reservoir holding a first fluid, the solvent bath shaped such that when the dispense head is in a selected position in the solvent bath, a second fluid dispensed from the at least one outlet opening enters the drain and the at least one outlet opening is exposed to the first fluid."

Applicant respectfully submits that the reasoning provided by the Examiner fails to show a prima facie case of obviousness by a preponderance of the evidence under 35 USC § 103.

The following is merely for the convenience of the Examiner. The law requires to prevent the use of hindsight an examiner "must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed." In re Rouffet, 149 F.3d 1350, 1359, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998) (emphasis added) (Also see MPEP 2142 as well as MPEP 2145). The PTO bears the burden of proving an obviousness type rejection based on findings of fact and not based on conclusive statements. In re Dembiczak, 175 F.3d 994 (Fed. Cir. 1999). The patent examiner must cite sufficient facts to meet the evidentiary standard of a prima facie case of obviousness by a preponderance of the evidence under 35 USC § 103 rather than a mere obvious to try standard. Ex parte Hillyer, 68 USPQ2d 1222, 1224 (Fed. Cir. 2003). Adequate findings of fact can come from several sources. Dembiczak at 996. The motivation to combine reference must be found in the cited references themselves. Id. Alternatively, the PTO may establish that one of ordinary skill in the art would have been

motivated to combine the references with articulated findings of fact regarding: 1) the level of skill in the art; 2) the relationship between the fields of the cited art; and 3) the particular features of the prior art references that would motivate one of ordinary skill in applicant's particular art to select elements disclosed in references from a wholly different field. Id.

"Our [Federal circuit] case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references." In re Lee, 277 F.3d 1338, 1344 (Fed. Cir. 2002). (emphasis added) "Because the Board did not explain the specific understanding or principle within the knowledge of a skilled artisan that would motivate one with no knowledge of Rouffet's [Appellant's] invention to make the combination, this court infers that the examiner selected these references with the assistance of hindsight." Rouffet at 1359 (emphasis added) "The Board must, inter alia, show some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that an individual to combine the relevant teachings of the references." In re Thrift, 298 F.3d 1357, 1361 (Fed. Cir. 2002) (emphasis added). The Federal Circuit gives guidance that the technological motivation to combine the references should be present in the text or drawings of each reference. Id. "Otherwise, the law infers that the examiner selected these references with the assistance of hindsight." See In re Rouffet.

The Examiner did not cite in either of the references where one skilled in the art of the present invention would find the suggestion from Tsukamoto and Nagamine to provide "a solvent bath attached to the frame having a reservoir and a drain, the reservoir holding a first fluid, the solvent bath shaped such that when the dispense head is in a selected position in the solvent bath, a second fluid dispensed from the at least one outlet opening enters the drain

and the at least one outlet opening is exposed to the first fluid" as recited in Claim 1.

None of Tsukamoto and Nagamine taught, motivated, or suggested the need to dispense any fluid form the nozzle while the nozzle is in the solvent bath through a drain provided in the solvent bath as taught by Applicant's invention as recited in Claim 1.

Claims 2-17 depend from Claim 1 and thus, the same discussion applies.

Claims 18-27 and 28-32 contain some similar limitations to Claim 1 and thus, the same discussion applies. For instance, Claim 18-27 require (with emphasis added)

> a solvent bath attached to the frame having a reservoir and a drain, the reservoir holding a first fluid, the solvent bath shaped such that when the dispense head is in a second position in the solvent bath, a second fluid dispensed from the at least one outlet opening enters the drain, and the at least one outlet opening is exposed to a second medium.

Claims 28-32 require (with emphasis added)

> a drain within the chamber positioned relative to the opening such that when the at least one nozzle of the dispense head is inserted into the opening a liquid dispensed from the at least one nozzle enters the drain and the at least one nozzle is exposed to the fluid held in the reservoir.

The Examiner has rejected claims 6-17, 21-27 and 29-32 under 35 U.S.C. §103(a) as being unpatentable over Nagamine in view of Tsukamoto as applied to claims 1, 18 and 28 above and further in view of JP2001-205162A.

The discussions above with regard to Tsukamoto and Nagamine are similarly applicable to this section. Furthermore, even if a nozzle cleaning is achieved by evaporating a cleaning liquid form a reservoir as taught by JP2001-205162A, JP2001-205162A did not teach or suggest a solvent bath with a reservoir and a drain where the fluid form the nozzle can be dispensed while in the solvent bath and enters the drain in the solvent bath.

Additionally, with respect to claims 9-13, 24-27, and 29-32, the construction of Tsukamoto and JP2001-205162A's solvent baths could have not made obvious claims 9-13,

24-27, and 29-32 for the same reasons stated above.

With respect to claims 14-18, even if Tsukamoto and JP2001-205162A taught the use of photoresist and solvent, claims 14-18 could have not been made obvious by Nagamine and in view of if Tsukamoto and JP2001-205162A for the same reasons stated above.

Therefore, as discussed above, the pending claims are patentable over the above references.

If the Examiner determines the prompt allowance of these claims could be facilitated by a telephone conference, the Examiner is invited to contact Mimi Dao at (408) 720-8300.

Pursuant to 37 C.F.R. 1.136(a)(3), applicant(s) hereby request and authorize the U.S. Patent and Trademark Office to (1) treat any concurrent or future reply that requires a petition for extension of time as incorporating a petition for extension of time for the appropriate length of time and (2) charge all required fees, including extension of time fees and fees under 37 C.F.R. 1.16 and 1.17, to Deposit Account No. 02-2666.

Also filed concurrently with this Amendment is Applicant's petition for Extension of Time under 37 C.F.R. § 1.136 (a) for a one-month extension.

Deposit Account Authorization

Authorization is hereby given to charge our Deposit Account No. 02-2666 for any charges that may be due. Furthermore, if an extension is required, then Applicant hereby requests such extension.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

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Mimi Diemmy Dao
Attorney for Applicant
Registration No. 45,628

12400 Wilshire Boulevard
Seventh Floor
Los Angeles, CA 90025-1026
(408) 720-8300